MULTIMEDIA BROADCASTING DEVICE AND A SUPPORT STRUCTURE THEREOF

BACKGROUND OF THE INVENTION

Field of the Invention

The invention relates to a multimedia broadcasting device and a support structure thereof, and more particularly a multimedia broadcasting device having a support structure.

Description of the Related Art

Flat computers have recently appeared on the market of electronic appliances. A flat computer has the characteristics of being flat and having a flat display, and currently constitutes a next generation of the notebook computer. The flat computer usually is provided with a digital stylus that allows the user to write directly on the computer screen. The user can also use a keyboard and a mouse to input data into the flat computer.

However, the flat computer may have the following disadvantages in utilization:

1. Due to its flat dimension, the flat computer has a good portability and is convenient for outdoor use. However, if the user wishes to use the same flat computer on a desk, the inclination angle of the flat computer cannot be easily adjusted, and its manipulation is less convenient.

2. Input and output of multimedia signals are usually achieved via the connection of external devices. The connection of several external devices can result in numerous cable connections, which may affect the aesthetic aspect and further necessitates manipulation from the flat computer.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide a multimedia broadcasting device and a support structure thereof, which can accommodate a flat computer thereon, enables the adjustment of the flat computer, and further incorporates signal connecting terminals, and signal input/output devices for connecting to the flat computer.

It is another object of the invention to provide a multimedia broadcasting device and a support structure thereof, which can either associate the use of the multimedia broadcasting device in connection with the flat computer or allows the independent use of the multimedia broadcasting device.

To achieve the above and other objectives, a support structure of the invention comprises a socle, a carrier platform, a first bi-directional adjustment mechanism, fixedly mounted to the socle, a second bi-directional adjustment mechanism, fixedly mounted to the carrier platform, and a connecting rod having two ends. One end of the connecting rod is connected to the first bi-directional adjustment mechanism, and the other end is connected to second bi-directional adjustment mechanism so as to enable adjustment of the inclination angle of the carrier platform and the connecting rod relative to the socle.

To provide a further understanding of the invention, the following detailed description illustrates embodiments and examples of the invention, this detailed description being provided only for illustration of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings included herein provide a further understanding of the invention. A brief introduction of the drawings is as follows:

FIG. 1 is a schematic view of a support structure carrying a flat computer

incorporating a multimedia broadcasting device according to an embodiment of the invention;

FIG. 2 is a schematic view showing an inclination adjustment of the support structure according to an embodiment of the invention;

FIG. 3 is a perspective view of a support structure according to an embodiment of the invention;

FIG. 4 is an exploded view of a support structure according to an embodiment of the invention;

FIG. 5 is a sectional view of a support structure according to an embodiment of the invention; and

FIG. 6 is a rear view of a support structure according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

Wherever possible in the following description, like reference numerals will refer to like elements and parts unless otherwise illustrated.

Referring to FIG. 1 and FIG. 2, the invention describes a multimedia broadcasting device and a support structure thereof. The support structure can accommodate one or more multimedia broadcasting devices and fasten a flat computer thereon. The support structure can be rotated to adjust the angle of observation of the computer, and thereby facilitates the observation and manipulation of the flat computer. Signal connecting terminals and input/output devices can be further integrated into the multimedia broadcasting device and a support structure thereof for connecting to the flat computer.

Referring to FIG. 3 through FIG. 6, the multimedia broadcasting device and a support structure thereof comprises a socle 20 having multimedia broadcasting units, a carrier platform 30, a connector assembly 40, first bi-

directional adjustment mechanism 50, second bi-directional adjustment mechanism 60, and connecting rod 70. The connector assembly 40 is assembled on the carrier platform 30 to receive the flat computer 10 and electrically connect the multimedia broadcasting device 21. The first bi-directional adjustment mechanism 50 is fixedly attached on the socle 20, and the second bi-directional adjustment mechanism 60 is fixedly attached on the carrier platform 30. One end of the connecting rod 70 connects to the first bi-directional adjustment mechanism 50, and a second end of the connecting rod 70 fixedly attaches to the second bi-directional adjustment mechanism 60.

The socle 20 includes a multimedia broadcasting device 21, a socle base 22, and a sound amplifier 24. The multimedia broadcasting device 21 and the sound amplifier 24 are embedded at a side of the socle base 22. Each of the first and second bi-directional adjustment mechanisms 50, 60 respectively includes a body 51, and first and second axles 52, 53. Two ends of the first axle 52 transversally connect pivotally to the body 51. One end of the second axle 53 directly connects pivotally to the body 51. The first axle 52 of the first bi-directional adjustment mechanism 50 further connects to one end of the connecting rod 70. The second axle 53 of the first bi-directional adjustment mechanism 50 connects to the socle base 22. The first axle 52 of the second bi-directional adjustment mechanism 60 connects to the other end of the connecting rod 70, while the second axle 53 of the second bi-directional adjustment mechanism 60 fixedly attaches to the carrier platform 30. The body 51 has a U-shape, defining two lateral wings. The two ends of each of the first axles 52 respectively connect pivotally to the two wings and protrude therefrom to attach fixedly an end of the connecting rod 70. One end of each of the second axles 53 pivotally connects to a central portion of the body 51. Each of the second axles 53 further includes a connecting part 54. The connecting part 54 of the first bi-

directional adjustment mechanism 50 fixedly attaches to the carrier platform 30.

The carrier platform 30 includes a first plate body 31, a second plate body 32, and a fastening plate 33. The first and second plate bodies 31, 32 are secured to each other to form an accommodating space 34. The second plate body 32 has a first through hole 35, and the fastening plate 33 forms a cross-shape and is placed in the accommodating space 34. One end of the fastening plate 33 fixedly attaches on the second plate body 32, and the fastening plate 33 bends and extends through the first through hole 35 to attach fixedly to the connecting part 54 of the second bi-directional adjustment mechanism 60. Casings 80, 85 mount together to enclose the first and second bi-directional adjustment mechanisms 50, 60. Two lids 90 cover the fastening plate 33 and abut against an outer side of the second plate body 32. Abutments 95 are further placed on a side of the carrier platform 30, and extend in the accommodating space 34 and fixedly secure to the second plate body 32. A positioning pin 39 protrudes from the first plate body 31 and serves as positioning reference for placement of the flat computer 10.

A retainer 100 is placed in the accommodating space 34 and extends from the carrier platform 30 for holding the flat computer 10 thereon. The retainer 100 includes a hooking rod 101 and spring 105. The hooking rod 101 has two protruding hooks 102 that slidably engage through corresponding holes 36, 37 of the first plate body 31. The spring 105 is fixedly mounted in the accommodating space 34. The hooking rod 101 is slidably assembled in the accommodating space 34, and has respectively one end abutting the spring 105 and another end extending out of the carrier platform 30.

The connector assembly 4 includes a sliding connector 41 and a movement-driving piece 45, being placed in the accommodating space 34. The movement-driving piece 45 is slidably mounted on the first and second plate bodies 31, 32, and has one end protruding from the carrier platform 30. The

sliding connector 41 has two protrusions 42 respectively sliding through slots 46 of the movement-driving piece 45. The sliding connector 41 can thereby slide to extend or retract through the hole 38, as shown in FIG. 5. By upward/downward move of movement-driving piece 45, the protrusions 42 of the sliding connector 41 slide along the slots 46 of the movement-driving piece 45, which thereby drives sliding of the sliding connector 41 through the hole 38. A USB connector 110, a PS/2 connector, a D-type connector and a power connector (not shown) may be further embedded in a side of the socle base 22 and connected to the connector assembly 40. Furthermore, manipulating buttons 23 can be placed on the socle base 22 and connected to the multimedia broadcasting device 21 and sound amplifier 24, being connected to the multimedia broadcasting device 21.

The connecting rod 70 includes first and second halves 71, 72. Respective axles 52 of the first and second bi-directional adjustment mechanisms 50, 60 are fixedly mounted on the first halve 71, and the second halve 72 covers the axles 52 by assembling to the first halve 71. Via this assembly of the first and second bi-directional adjustment mechanisms 50, 60, the carrier platform 30 and the connecting rod 70 can be thereby desirably adjusted by rotation to an adequate inclination angle relative to the socle 20.

As described above, a flat computer can be fastened on the support structure of the invention and the support structure allows for adjustment of the inclination angle of the flat computer for adequate viewing and manipulation. In addition, the support structure can integrate signal connecting terminals, signal input/output devices being connected to the flat computer. Furthermore, the support structure can incorporate a multimedia broadcasting device used in connection to the flat computer or used independently.

It should be apparent to those skilled in the art that the above description is only illustrative of specific embodiments and examples of the invention, and

should not be construed in a limiting way. Therefore, the invention should cover various modifications and variations made to the herein-described structure and operations of the invention, provided they fall within the scope of the invention as defined in the following appended claims.

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